



US007367655B2

(12) **United States Patent**
Scardovi et al.

(10) **Patent No.:** **US 7,367,655 B2**
(45) **Date of Patent:** **May 6, 2008**

(54) **INTEGRATED PRINthead WITH
ENCODING CIRCUIT**

(58) **Field of Classification Search** 347/5,
347/9, 14, 19, 56-59

See application file for complete search history.

(75) Inventors: **Alessandra Scardovi**, Ivrea (IT);
Renato Conta, Ivrea (IT)

(56) **References Cited**

(73) Assignee: **Telecom Italia S.p.A.**, Milan (IT)

U.S. PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 286 days.

5,363,134 A 11/1994 Badyal et al. 347/59
5,506,611 A * 4/1996 Ujita et al. 347/19
5,635,968 A * 6/1997 Bhaskar et al. 347/59

FOREIGN PATENT DOCUMENTS

(21) Appl. No.: **10/538,749**

EP 0 916 503 A 5/1999

(22) PCT Filed: **Dec. 19, 2003**

WO 0 274 435 7/1988

(86) PCT No.: **PCT/IT03/00842**

WO WO 01/03932 A 1/2001

§ 371 (c)(1),

(2), (4) Date: **Jun. 14, 2005**

* cited by examiner

Primary Examiner—Juanita D. Stephens

(74) *Attorney, Agent, or Firm*—Venable LLP, Robert
Kinberg, Steven J. Schwarz

(87) PCT Pub. No.: **WO2004/056571**

(57) **ABSTRACT**

PCT Pub. Date: **Jul. 8, 2004**

Ink jet printhead comprising a driving and encoding circuit
(20) having a grid-like structure, including a plurality of
inputs (24), a plurality of selecting elements (12), a plurality
of actuating elements (11) and at least one identifying
element (21) of said printhead. Each identifying element
(21) is associated with a corresponding selecting element
(12) and corresponds to nodes arranged along a row or
column of said grid-like structure, and is scanned, together
with said actuating elements (11), during a preliminary
checking step.

(65) **Prior Publication Data**

US 2006/0244771 A1 Nov. 2, 2006

(30) **Foreign Application Priority Data**

Dec. 23, 2002 (IT) TO2002A1113

(51) **Int. Cl.**

B41J 2/05 (2006.01)

(52) **U.S. Cl.** 347/57; 347/58

9 Claims, 5 Drawing Sheets

20

